

In re Patent Application of:
MORSE ET AL.
Serial No. 10/718,908
Filing Date: NOVEMBER 21, 2003

REMARKS

Applicants would like to thank the Examiner for the thorough examination of the present application. The independent claims have been amended to more clearly define the present invention over the cited prior art references. The claim amendments and arguments supporting patentability of the claims are provided below.

I. The Amended Claims

The present invention, as recited in amended independent Claim 1, for example, is directed to an optical connector adapter comprising a substrate comprising at least one optical waveguide for transporting optical signals. The substrate has opposing ends between which the at least one optical waveguide extends, and a top reference surface and a side reference surface are aligned relative to the at least one optical waveguide. The top reference surface and side reference surface extend between the opposing ends of the substrate.

A respective carrier bracket is received over each end of the substrate. Respective substrate alignment fiducials align the carrier brackets relative to the substrate. A substrate carrier receives the substrate and carrier brackets. Respective carrier alignment fiducials align the substrate carrier and the carrier brackets. An optical coupler is received on the top reference surface of the substrate for coupling the at least one optical waveguide. At least one coupler alignment fiducial aligns the optical coupler relative to the substrate so that the

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optical coupler is aligned relative to the at least one optical waveguide.

Independent Claim 1 has been amended to better highlight that the top reference surface and side reference surface of the substrate extend between the opposing ends of the substrate. As a result, the optical coupler is received on the top reference surface of the substrate for coupling the at least one optical waveguide, as best illustrated in FIGS. 12-18. Moreover, the coupler alignment fiducial advantageously creates a data point so that the optical coupler may be passively aligned with the optical signals to/from the at least one optical waveguide.

Independent Claim 18 has been amended similar to amended independent Claim 1. Instead of reciting the substrate comprising at least one optical waveguide, Claim 18 recites the substrate having at least one groove formed within a top reference surface for receiving at least one optical fiber.

Independent method Claim 28 has been amended similar to amended independent Claim 1, and is directed to a method of forming an optical connector adapter as defined in Claim 1.

II. The Claims Are Patentable

The Examiner rejected independent Claims 1, 18 and 28 over the Naghski patent in view of the O'Toole et al. patent. The Examiner cited the Naghski patent as disclosing in FIGS. 1 and 2 an optical connector adapter 10 comprising a substrate 18a, 18b comprising at least one optical waveguide for transporting

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optical signals. The substrate has opposing ends, and a top reference surface and a side reference surface (angled edges) 25 aligned relative to the at least one optical waveguide.

A carrier bracket 19 is received over each end of the substrate 18a, 18b. Respective substrate alignment fiducials 17 align the carrier brackets 19 relative to the substrate 18a, 18b.

A substrate carrier 11 receives the substrate 18a, 18b and carrier brackets 19. Respective carrier alignment fiducials 12 align the substrate carrier 11 and the carrier brackets 19.

Independent Claim 1 initially recited "an optical coupler received on the substrate carrier." The Examiner took the position that the term "optical coupler" is very broad and can encompass many different varieties of light couplers within the field of telecommunications, one of which could be the device of Naghski coupled directly to another similar device to couple light therebetween; or an optical connector could be a separate device with which two different optical connectors mate in order to couple light between the two connectors. The Examiner cited the O'Toole et al. patent as an optical coupler comprising a prism, or a plurality of lens including a collimating lens to couple one optical connector to another optical connector.

Independent Claim 1 has been amended to recite that the substrate has opposing ends between which the at least one optical waveguide extends. A top reference surface and a side reference surface are aligned relative to the at least one optical waveguide. The top reference surface and side reference surface extend between the opposing ends of the substrate.

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Consequently, the optical coupler is received on the top reference surface of the substrate for coupling the optical waveguide. In the Naghski patent, the at least one optical waveguide is sandwiched between substrate 18a and 18b. Consequently, the optical coupler in the Naghski patent is received at the ends of the substrate 18a and 18b, and not on the top reference surface that extends between the opposing ends of the substrate as recited in amended independent Claim 1. In the O'Toole et al. patent, the optical coupler is also received at the ends of the substrate.

Accordingly, it is submitted that amended independent Claim 1 is patentable over the Naghski patent in view of the O'Toole et al. patent. Amended independent Claims 18 and 28 are similar to amended independent Claim 1. Therefore, it is submitted that these claims are also patentable over the Naghski patent in view of the O'Toole et al. patent.

In view of the patentability of amended independent Claims 1, 18 and 28, it is submitted that the dependent claims, which include yet further distinguishing features of the invention are also patentable. These dependent claims need no further discussion herein.

III. CONCLUSION

In view of the claim amendments and arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner

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is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,


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